

C-4.2 Predict the products of acid-base neutralization and combustion reactions.

Revised Taxonomy Level 2.5-B Infer (predict) conceptual understanding

In physical science, students:

- ❖ Classify various solutions as acids or bases according to their physical properties, chemical properties (including neutralization and reaction with metals), generalized formulas, and pH (using pH meters, pH paper, and litmus paper). (PS-3.8)

It is essential for students to

- ❖ Predict the products for selected chemical reactions when given the reactants.
 - Single replacement
 - Students should know how to use a table showing The Activity Series of the Elements
 - Replacement of a metal with a more active metal
 - Replacement of hydrogen in an acid by a metal
 - Double replacement
 - Students should know how to use a table of solubility rules
 - Formation of a precipitate including
 - ◆ Formula equation
 - ◆ Ionic equation
 - ◆ Net ionic equation
 - Neutralization
 - Synthesis
 - Combustion of hydrocarbons

❖ Assessment Guidelines

The objective of this indicator is for students to infer (predict), or draw a logical conclusion from presented information, in this case to predict the products of selected chemical reactions when presented with the reactants. As this is conceptual knowledge (knowledge of the interrelationships among the basic elements within a large structure that enable them to function together) In this case, assessments must show that students understand how the chemical properties of the substances and the relationships among the substances determine the products of given reactions, and that the student can represent that reaction in the correct and accepted form.